WHAT IS CLAIMED IS:

1	1. An (R)-2,3-butanediol dehydrogenase, wherein	
2	(a) the dehydrogenase produces (R)-acetoin by acting on (2R,3R)-2,3-	
3	butanediol using nicotinamide adenine dinucleotide as a coenzyme and produces	
4	(2R,3R)-2,3-butanediol by reducing 2,3-butanedione using reduced form of	
5	nicotinamide adenine dinucleotide as a coenzyme;	
6	(b) the dehydrogenase uses nicotinamide adenine dinucleotide as a coenzym	e
7	in oxidation reaction and uses reduced form of nicotinamide adenine dinucleotide as	s a
8	coenzyme in reduction reaction and preferentially oxidizes a hydroxyl group of 2,3-	•
9	butanediol in (R) configuration; and	
10	(c) the dehydrogenase has 100 U or higher of (R)-2,3-butanediol	
11	dehydrogenase activity per 1 mg of the dehydrogenase when purified.	
1	2. The (R)-2,3-butanediol dehydrogenase of claim 1, wherein the dehydrogena	ıse
2	has (a) an optimal pH for glycerol oxidation reaction of 10; and (b) a molecular weight of	
3	36,000 when determined by sodium dodecyl sulfate-polyacrylamide gel electrophoresis and	d
4	76,000 when determined by gel filtration.	
1	3. The (R)-2,3-butanediol dehydrogenase of claim 1, wherein the dehydrogena	ıse
2	is produced by a microorganism belonging to the genus Pichia.	
1	4. The (R)-2,3-butanediol dehydrogenase of claim 3, wherein the microorganic	sm
2	is Pichia angusta.	
1	5. An isolated polynucleotide selected from the group consisting of:	
2	(a) a polynucleotide comprising the nucleotide sequence of SEQ ID NO:1;	
3	(b) a polynucleotide encoding a polypeptide comprising the amino acid sequence	ce
4	of SEQ ID NO:2;	
5	(c) a polynucleotide encoding a polypeptide that comprises an amino acid	
6	sequence comprising the amino acid sequence of SEQ ID NO: 2 in which one or more amino	ino
7	acids are substituted, deleted, inserted, and/or added and that is functionally equivalent to a	a
8	polypeptide comprising the amino acid sequence of SEQ ID NO:2; and	

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- (d) a polynucleotide that hybridizes under stringent conditions to a polynucleotide comprising the nucleotide sequence of SEQ ID NO: 1 and that encodes a polypeptide functionally equivalent to a polypeptide comprising the amino acid sequence of SEQ ID NO:2.
- 1 6. The isolated polynucleotide of claim 5, wherein the polynucleotide comprises 2 a nucleotide sequence having 70% or higher percent identity to the nucleotide sequence of 3 SEQ ID NO:1.
- The isolated polynucleotide of claim 5, wherein the polynucleotide encodes an amino acid sequence having 70% or higher percent identity to the amino acid sequence of SEQ ID NO:2.
 - 8. A substantially purified polypeptide encoded by the polynucleotide of claim 5.
 - 9. The polypeptide of claim 8, wherein the polypeptide comprises the amino acid sequence of SEQ ID NO:2.
 - 10. A vector comprising the polynucleotide of claim 5.
 - 11. A transformant comprising the polynucleotide of claim 5.
 - 12. A transformant comprising the vector of claim 10.
 - 13. A method for producing a polypeptide, the method comprising the steps of: culturing the transformant of claim 11 and recovering an expression product.
 - 14. A method for producing an (R)-2,3-butanediol dehydrogenase, the method comprising: (a) culturing a microorganism that belongs to the genus *Pichia* and that produces the dehydrogenase of claim 1 and (b) isolating the dehydrogenase from the microorganism.
 - 15. A method for producing an (R)-2,3-butanediol dehydrogenase, the method comprising: (a) culturing a microorganism that belongs to the genus *Pichia* and that produces the polypeptide of claim 8 and (b) isolating the dehydrogenase from the microorganism.
 - 16. The method of claim 14, wherein the microorganism is *Pichia angusta*.

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alcohol is (2R,3R)-2,3-butanediol.

1	17. A method for producing an alcohol, the method comprising the steps of:
2	reacting the (R)-2,3-butanediol dehydrogenase of claim 1 or a processed product
3	thereof to a ketone in the presence of reduced form of nicotinamide adenine dinucleotide to
4	generate an alcohol, and
5	recovering the generated alcohol.
1	18. A method for producing an alcohol, the method comprising the steps of:
2	reacting the polypeptide of claim 8 or a processed product thereof to a ketone in the
3	presence of reduced form of nicotinamide adenine dinucleotide to generate an alcohol, and
4	recovering the generated alcohol.
1	19. A method for producing an alcohol, the method comprising the steps of:
2	providing a microorganism producing the (R)-2,3-butanediol dehydrogenase of
3	claim 1 or a processed product thereof;
4	reacting the (R)-2,3-butanediol dehydrogenase produced from the microorganism to a
5	ketone in the presence of reduced form of nicotinamide adenine dinucleotide to generate an
6	alcohol, and
7	recovering the generated alcohol.
1	20. The method of claim 19, wherein the microorganism is the transformant of
2	claim 11.
1	21. The method of claim 17, wherein the ketone is 2,3-butanedione and the
2	alcohol is (2R,3R)-2,3-butanediol.
1	22. The method of claim 18, wherein the ketone is 2,3-butanedione and the
2	alcohol is (2R,3R)-2,3-butanediol.
1	23. The method of claim 19, wherein the ketone is 2,3-butanedione and the